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wherein the service suspended period is an interruption of service by the system.

Please cancel Claims 6 and 7 without prejudice.

REMARKS

This responds to the final Office Action of August 27, 2002. Claims 1, 8, 11, 16, 21, 23 and 24 have been amended for clarification purposes above. Claims 6 and 7 have been canceled without prejudice.

The Examiner maintains the rejections of Claims 1-5 and 8-26 based on the same grounds given in the prior Office Action. Thus, independent Claims 8, 23 and 24 were again rejected under 35 U.S.C. 102(e) as anticipated by Smith in paragraph 2 of the final Office Action. However, as previously noted, Smith appears to disclose a billing method where a user initiates a non-communication state, such as by not speaking or by inputting a hold. Accordingly, users are billed for the period of time during which they actually communicate, even though the call is connected by the system during Smith's non-communication states.

The portions of Smith cited in the Office Action demonstrate that the non-communication states are user initiated. Thus, for example, col. 2, lines 11-17 and col. 4, lines 2-3 (cited against Claim 8, for example) and col. 2, lines 10-14 (cited in the "Response To Amendment" in paragraph 7 of the Office Action) refers to the user placing a call on "hold".

By contrast, the current invention is directed at time periods where service is not provided due to an interruption by the system. The user does not initiate such an interruption. Therefore, charges for the service provided is more reasonable, since it excludes periods where service is interrupted by the system, and disagreements between the service provider and customers are consequently reduced.

Claim 8 has been amended above to further clarify and emphasize this distinction by adding the recitation "wherein service suspension periods are interruptions of service by the system". Thus, for at least this reason, Claim 8 is distinguished from Smith. Independent Claims 23 and 24 have been amended in like clarifying manner above and

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may likewise be distinguished from Smith for at least analogous reasons.

In addition, it is noted that the particular billing method recited in Claim 23 is also not found in the cited portions of Smith, even for the "noncommunication states" as defined by Smith. The Abstract of Smith cited only provides a description of a "hold" period, states that such periods are accumulated for a call and that the charge for the call is adjusted accordingly. Col. 3, lines 30-37, cited states that "the call billing record is enhanced to include data concerning noncommunicating time" and that the noncommunication data "is subsequently processed to subtract some fraction of the noncommunicating time from the total duration of the call".

Thus, the cited portions of Smith also fail to describe the Claim 23 recitations of "counting the number of service suspension occurrences generated during a service, constructing billing data including the count value, and sending the billing data to a billing processor" and "producing a total service suspended period by multiplying the number of service suspension occurrences by an average service suspended period, subtracting the total service suspended period from an overall service period, and billing a subscriber for a resulting normal service period". Because Smith fails to disclose these particular billing steps as recited in Claim 23, Claim 23 is distinguished from Smith for at least this additional reason.

Thus, independent Claims 8, 23 and 24 are distinguishable from Smith for at least the reasons given above. Dependent Claims 9, 10, 25 and 26 were also rejected in paragraph 2 of the Office Action as anticipated by Smith. Without conceding the patentability per se of dependent Claims 9, 10, 25 and 26, it is submitted that they are distinguished from Smith at least by virtue of their dependencies on their respective independent claim.

Independent Claims 1, 16, 21 and 23 were again rejected in paragraph 4 of the Office Action under 35 U.S.C. 103(a) as unpatentable over Smith in view of Renton. Claims 1 and 16 have been amended above to include analogous clarifying recitation regarding service suspension, and may be distinguished from Smith in at least analogous manner to that described above for Claims 8, 21 and 23. In addition, Renton is not directed at any of the

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deficiencies discussed above with respect to Smith. Thus, without conceding that the combination is proper, the combination of Smith and Renton fails to disclose at least the service suspension being system interruptions, and thus fails to present a prima facie case of obviousness with respect to independent Claims 1, 16, 21 and 23.

Dependent Claims 2, 3, 19, 20 and 22 were also rejected in paragraph 4 of the Office Action as obvious over Smith in view of Renton. Without conceding the patentability per se of dependent Claims 2, 3, 19, 20 and 22, it is submitted that they are distinguished from Smith and Renton at least by virtue of their dependencies on their respective independent claim.

Dependent Claims 4, 5, 17 and 18 were rejected in paragraph 5 of the Office Action as obvious over Smith in view of Azuma. Azuma is not directed at any of the deficiencies discussed above with respect to Smith. Thus, without conceding the patentability per se of dependent Claims 4, 5, 17 and 18, it is submitted that they are distinguished from Smith and Azuma at least by virtue of their dependencies on their respective independent claim.

Independent Claims 11 and 21 were rejected in paragraph 6 of the Office Action as obvious over Smith in view of Cauffman. Claims 11 and 21 have been amended above to include analogous clarifying recitation regarding service suspension, and may be distinguished from Smith in at least analogous manner to that described above for Claims 8, 21 and 23. In addition, Cauffman is not directed at any of the deficiencies discussed above with respect to Smith. Thus, without conceding that the combination is proper, the combination of Smith and Cauffman fails to disclose at least the service suspension being system interruptions, and thus fails to present a prima facie case of obviousness with respect to independent Claims 11 and 21.

In addition, the temporary index file referred to in Cauffman relates to call detail records and call summary records. Thus, Cauffman has no relation to assigning a unique index that relates to the storage or designation of parameters relating to a service suspension sate or period. Thus, independent Claims 11 and 21 may also be distinguished from the combination

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of Smith and Cauffman for at least this additional reason. (It is noted that independent Claim 21 may also be distinguished from the combination of Smith and Renton given in paragraph 4 of the Office Action for at least this additional reason.)

Dependent Claims 12-15 and 22 were also rejected in paragraph 6 of the Office Action as obvious over Smith in view of Cauffman. Without conceding the patentability per se of dependent Claims 12-15 and 22, it is submitted that they are distinguished from Smith and Cauffman at least by virtue of their dependencies on their respective independent claim.

Finally, it is noted that in paragraph 8 of the Office Action, the Examiner maintains that the arguments that were presented on pages 3-5 of the prior Response of June 28, 2002 rely on features that are purportedly not recited in the claims. It is believed that the Examiner is incorrect in this assessment: Each identified feature is in fact recited in the claim and is not found in the cited reference. For example, it was noted on page 3 of the prior Response that Smith does not show "averaging"; by contrast, Claim 23 recites "average service suspended period". The other points made on pages 3-5 of the prior Response are likewise based on recitations found in each of the claims identified.

Accordingly, in view of the above amendments and remarks, reconsideration and allowance of all of the pending claims in the application, namely Claims 1-5 and 8-26, is respectfully requested. Should the Examiner believe that a telephone conference or personal interview would facilitate resolution of any remaining matters, the Examiner may contact Applicant's attorney at the number given below.

Respectfully submitted,

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Rewritten claims marked up to show all the changes relative to the previous version of the claims:

1. (Amended) A method of billing service in an electronic switch in a cellular network <u>system</u>, comprising the steps of:

setting a time when a service initiation request or a service resumption request is generated as a service start time and initiating a call ;

setting a service suspension request time as a service end time upon generation of a service suspension request <u>by the system</u> during the service and suspending the service;

sending billing data including the service start time and the service end time in the service suspended state, and determining whether a service resumption request is generated; and

ending the service when a service termination request is generated in the service suspended state.

8. (Amended) A method of billing service in an electronic switch in a cellular network <u>system</u> comprising the steps of:

calculating a service suspended period whenever a service suspension occurs during a service and accumulating service suspended periods; and

constructing billing data, including a final service suspended period being the accumulated value of service suspended periods and sending the billing data to a billing processor, when the service ends<u>, wherein service suspension periods are interruptions of service by the system</u>.

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11. (Amended) A method of billing service in an electronic switch in a cellular network system, comprising the steps of:

calculating a service suspended period whenever a service suspension occurs during a service and storing the service suspended period according to a unique index; and

constructing billing data including stored service suspended periods and sending the billing data to a billing processor, when the service ends,

wherein service suspension periods are interruptions of service by the system.

16. (Amended) A method of billing service in an electronic switch in a cellular network system, comprising the steps of:

setting a service initiation request time upon request for call initiation and initiating a call ;

setting a service suspension request time as a service suspension start time upon request for service suspension and suspending the service;

setting a service resumption request time as a service suspension end time upon request for service resumption in the service suspended state, calculating a service suspended time from the service suspension start time and the service suspension end time, adding the calculated service suspended period to a previous service suspended period, and resuming the service;

setting a service termination request time as a service end time upon request for service termination in the service suspended state, calculating a service suspended time from the service suspension start time and the service end time, adding the calculated service suspended period to a previous service suspended period, and resuming the service; and

sending billing data including the service start time, the service end time and a final accumulated service suspended time to a billing processor, and ending the service,

wherein service suspension periods are interruptions of service by the system.

21. (Amended) A method of billing service in an electronic switch in a cellular network system, comprising the steps of:

designating a unique index upon request for service suspension during a service, setting a service suspension request time as a service suspension start time according to the unique index, and suspending the service;

designating a unique index upon request for service resumption in the service suspended state, setting a service resumption request time as a service suspension end time according to the unique index, and resuming the service;

designating a unique index upon request for service termination in the service suspended state, and setting a service termination request time as a service suspension end time according to the unique index; and

constructing billing data including the service suspension start time and the service suspension end time, sending the billing data to a billing processor, and ending the service,

wherein the service suspended state is an interruption of service by the system.

23. (Amended) A billing method in an electronic switch in a cellular network system, comprising the steps of:

counting the number of service suspension occurrences generated during a service, constructing billing data including the count value, and sending the billing data to a billing processor, via a call processor; and

producing a total service suspended period by multiplying the number of service suspension occurrences by an average service suspended period, subtracting the total service

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suspended period from an overall service period, and billing a subscriber for a resulting normal service period,

wherein service suspension occurrences are interruptions of service by the system.

24. (Amended) A billing method in an electronic switch in a cellular network system, comprising the steps of:

calculating a service suspended period during a service in progress; and

billing a subscriber for a normal service period resulting from subtracting the calculated service time period from an overall service period,

wherein the service suspended period is an interruption of service by the system.